AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An MPEG picture data recording apparatus for recording an MPEG picture data that is a picture data compressed according to an MPEG encoding system, the MPEG picture data recording apparatus comprising:

recording means for recording the MPEG picture data onto a recording medium together with information that shows a VBV buffer occupation value at an end point in time of encoding of a picture one frame before an I picture, information that shows a VBV buffer occupation value at an end point in time of encoding of a picture one frame before a P picture, and information that shows a VBV buffer occupation value at an end point in time of recording, in a bit stream of the MPEG picture data respectively, and address information that shows a point of time of the MPEG picture data each VBV buffer occupation value belongs to.

2. (Original) An MPEG picture data recording apparatus for recording an MPEG picture data that is a picture data compressed according to an MPEG encoding system, wherein

in the case of additionally recording a second MPEG picture data at an end position of a first MPEG picture data or at an intermediate position of the first MPEG picture data onto a recording medium that has already been recorded with the first MPEG picture data,

together with information that shows a VBV buffer occupation value at an end point in time of encoding of a picture one frame before an I picture, information that shows a VBV buffer occupation value at an end point in time of encoding of a picture one frame before a P picture, and information that shows a VBV buffer occupation value at an end point in time of recording, in a bit stream of the first MPEG picture data respectively, and address information that shows a point of time of the first MPEG picture data each VBV buffer occupation value belongs to,

the MPEG picture data recording apparatus comprises:

detecting means for detecting information that shows the VBV buffer occupation value corresponding to a position nearest to the position of starting the additional recording of the second MPEG picture data in the first MPEG picture data, based on the address information;

encoding means for executing an MPEG encoding of the second picture data and obtaining the second MPEG picture data, while starting a VBV buffer control based on the detected information that shows the VBV buffer occupation value; and

recording means for recording the second MPEG picture data onto the recording medium.

3. (Original) An MPEG picture data recording method for recording an MPEG picture data that is a picture data compressed according to an MPEG encoding system, the MPEG picture data recording method comprising the steps of:

generating information that shows a VBV buffer occupation value at an end point in time of encoding of a picture one frame before an I picture, information that shows a VBV buffer occupation value at an end point in time of encoding of a picture one frame before a P picture,

and information that shows a VBV buffer occupation value at an end point in time of recording, in a bit stream of the MPEG picture data respectively;

generating address information that shows a point of time of the MPEG picture data each VBV buffer occupation value belongs to; and

recording the information that shows each VBV buffer occupation value, and the address information onto a recording medium together with the MPEG picture data.

4. (Original) An MPEG picture data recording method for recording an MPEG picture data that is a picture data compressed according to an MPEG encoding system, wherein

in the case of additionally recording a second MPEG picture data at an end position of a first MPEG picture data or at an intermediate position of the first MPEG picture data onto a recording medium that has already been recorded with the first MPEG picture data,

together with information that shows a VBV buffer occupation value at an end point in time of encoding of a picture one frame before an I picture, information that shows a VBV buffer occupation value at an end point in time of encoding of a picture one frame before a P picture, and information that shows a VBV buffer occupation value at an end point in time of recording, in a bit stream of the first MPEG picture data respectively, and address information that shows a point of time of the first MPEG picture data each VBV buffer occupation value belongs to,

the MPEG picture data recording method comprises the steps of:

detecting information that shows the VBV buffer occupation value corresponding to a position nearest to the position of starting the additional recording of the second MPEG picture data in the first MPEG picture data, based on the address information;

executing an MPEG encoding of the second picture data and obtaining the second MPEG picture data, while starting a VBV buffer control based on the detected information that shows the VBV buffer occupation value; and

recording the second MPEG picture data onto the recording medium.

5. (Canceled)

6. (Original) An MPEG picture data recording apparatus for recording an MPEG picture data that is a picture data encoded according to an MPEG encoding system, the MPEG picture data recording apparatus comprising:

VBV buffer information recording means for recording onto a recording medium, VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each predetermined section of the MPEG picture data, and address information that shows a position of the VBV buffer occupation value relevant information in the MPEG picture data.

7. (Original) An MPEG picture data recording apparatus comprising recording means for recording a generated connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data VBV has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data VBV has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second predetermined section of the second MPEG picture data, and second address information that shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the recording means comprises:

detecting means for detecting the first VBV buffer occupation value relevant information corresponding to a starting position of a connection section based on the first address

information, and detecting the second VBV buffer occupation value relevant information corresponding to the specified connection position in the second MPEG picture data based on the second address information, with the specified connection position specified as a boundary of the second predetermined section in at least the second MPEG picture data, wherein the connection section is a section from a boundary of the first predetermined section located a predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position; and

re-encoding means for re-encoding the connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the connection section, according to the MPEG encoding system, thereby to obtain the connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the information value relating to the VBV buffer occupation value obtained based on the detected second VBV buffer occupation value relevant information,

thereby recording the connection section re-encoded data onto a recording medium.

8. (Original) The MPEG picture data recording apparatus according to claim 7, wherein the recording means records a connection section MPEG multiplexed data that includes the

connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

9. (Original) An MPEG picture data recording apparatus comprising recording means for recording a generated connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data VBV has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data VBV has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second predetermined section of the second MPEG picture data, and second address information that shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the recording means comprises:

detecting means for detecting the first VBV buffer occupation value relevant information corresponding to an specified connection position in the first MPEG picture data based on the first address information, and detecting the second VBV buffer occupation value relevant information corresponding to an end position of a connection section based on the second address information, with the specified connection position specified as a boundary of the first predetermined section in at least the first MPEG picture data, wherein the connection section is a section from the specified connection position in the second MPEG picture data as a starting position to a boundary of the second predetermined section located a predetermined time after the specified connection position in the second MPEG picture data as the end position; and

re-encoding means for re-encoding the connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the connection section, according to the MPEG encoding system, thereby to obtain the connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the information value relating to the VBV buffer occupation value obtained based on the detected second VBV buffer occupation value relevant information,

thereby recording the connection section re-encoded data onto a recording medium.

10. (Original) The MPEG picture data recording apparatus according to claim 9, wherein the recording means records a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

11. (Original) An MPEG picture data recording apparatus comprising recording means for recording a generated third connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data VBV has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data VBV has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second predetermined section of the second MPEG picture data, and second address information that

shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the recording means comprises:

detecting means for detecting the first VBV buffer occupation value relevant information corresponding to a starting position of a first connection section based on the first address information, and detecting the second VBV buffer occupation value relevant information corresponding to an end position of a second connection section based on the second address information, wherein the first connection section is a section from a boundary of the first predetermined section located a first predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position, and the second connection section is a section from the specified connection position in the second MPEG picture data to a boundary of the second predetermined section located a second predetermined time after the specified connection position in the second MPEG picture data as an end position; and

re-encoding means for re-encoding a third connection section decoded picture data according to the MPEG encoding system thereby to obtain a third connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the information value relating to the VBV buffer occupation value obtained based on the detected

second VBV buffer occupation value relevant information, wherein the third connection section is a section obtained by combining the first connection section and the second connection section together, and the third connection section decoded picture data consists of a first connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the first connection section, and a second connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the second connection section,

thereby recording the third connection section re-encoded data onto a recording medium.

12. (Original) The MPEG picture data recording apparatus according to claim 11, wherein the recording means records a connection section MPEG multiplexed data that includes the third connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

13. (Original) An MPEG picture data recording apparatus for recording an MPEG multiplexed data that includes an MPEG picture data as a picture data encoded according to an MPEG encoding system as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system, the MPEG picture data recording apparatus comprising:

VBV buffer information recording means for recording onto a recording medium, VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a

last picture in each predetermined section of the MPEG picture data, and address information that shows a position of the VBV buffer occupation value relevant information in the MPEG picture data.

14. - 19. (Canceled)

20. (Original) An MPEG picture data generating apparatus comprising generating means for generating a connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second

predetermined section of the second MPEG picture data, and second address information that shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the generating means comprises:

detecting means for detecting the first VBV buffer occupation value relevant information corresponding to a starting position of a connection section based on the first address information, and detecting the second VBV buffer occupation value relevant information corresponding to the specified connection position in the second MPEG picture data based on the second address information, with the specified connection position specified as a boundary of the second predetermined section in at least the second MPEG picture data, wherein the connection section is a section from a boundary of the first predetermined section located a predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position; and

re-encoding means for re-encoding the connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the connection section, according to the MPEG encoding system, thereby to obtain the connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the

information value relating to the VBV buffer occupation value obtained based on the detected second VBV buffer occupation value relevant information.

21. (Original) The MPEG picture data generating apparatus according to claim 20, wherein the generating means generates a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

22. (Original) An MPEG picture data generating apparatus comprising generating means for generating a connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second predetermined section of the second MPEG picture data, and second address information that shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the generating means comprises:

detecting means for detecting the first VBV buffer occupation value relevant information corresponding to an specified connection position in the first MPEG picture data based on the first address information, and detecting the second VBV buffer occupation value relevant information corresponding to an end position of a connection section based on the second address information, with the specified connection position specified as a boundary of the first predetermined section in at least the first MPEG picture data, wherein the connection section is a section from the specified connection position in the second MPEG picture data as a starting position to a boundary of the second predetermined section located a predetermined time after the specified connection position in the second MPEG picture data as the end position; and

re-encoding means for re-encoding the connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the connection section, according to the MPEG encoding system, thereby to obtain the connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding

starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the information value relating to the VBV buffer occupation value obtained based on the detected second VBV buffer occupation value relevant information.

23. (Original) The MPEG picture data generating apparatus according to claim 22, wherein the generating means generates a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

24. (Original) An MPEG picture data generating apparatus comprising generating means for generating a third connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation-value at an MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a

position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second predetermined section of the second MPEG picture data, and second address information that shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the generating means comprises:

detecting means for detecting the first VBV buffer occupation value relevant information corresponding to a starting position of a first connection section based on the first address information, and detecting the second VBV buffer occupation value relevant information corresponding to an end position of a second connection section based on the second address information, wherein the first connection section is a section from a boundary of the first predetermined section located a first predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position, and the second connection section is a section from the specified connection position in the second MPEG picture data to a boundary of the second predetermined section located a second predetermined time after the specified connection position in the second MPEG picture data as an end position; and

re-encoding means for re-encoding a third connection section decoded picture data according to the MPEG encoding system thereby to obtain a third connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the information value relating to the VBV buffer occupation value obtained based on the detected second VBV buffer occupation value relevant information, wherein the third connection section is a section obtained by combining the first connection section and the second connection section together, and the third connection section decoded picture data consists of a first connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the first connection section, and a second connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the second connection section.

25. (Original) The MPEG picture data generating apparatus according to claim 24, wherein the generating means generates a third connection section MPEG multiplexed data that includes the third connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

26. (Original) An MPEG picture data recording method comprising the steps of:

recording onto a recording medium, VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each predetermined section of an MPEG picture data that is a picture data encoded according to an MPEG encoding system, and address information that shows a position of the VBV buffer occupation value relevant information in the MPEG picture data.

27. (Original) The MPEG picture data recording method according to claim 26, wherein the MPEG picture data is obtained from an MPEG multiplexed data that has been generated by being packet-multiplexed according to the MPEG encoding system.

28. (Original) An MPEG picture data recording method comprising a recording step of recording a generated connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data VBV has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an

MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data VBV has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second predetermined section of the second MPEG picture data, and second address information that shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the recording step comprises:

a detecting step of detecting the first VBV buffer occupation value relevant information corresponding to a starting position of a connection section based on the first address information, and detecting the second VBV buffer occupation value relevant information corresponding to the specified connection position in the second MPEG picture data based on the second address information, with the specified connection position specified as a boundary of the second predetermined section in at least the second MPEG picture data, wherein the connection section is a section from a boundary of the first predetermined section located a predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position; and

a re-encoding step of re-encoding the connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the connection section, according to the MPEG encoding system, thereby to obtain the connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the information value relating to the VBV buffer occupation value obtained based on the detected second VBV buffer occupation value relevant information,

thereby recording the connection section re-encoded data onto a recording medium.

29. (Original) The MPEG picture data recording method according to claim 28, wherein the recording step records a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

30. (Original) An MPEG picture data recording method comprising a recording step of recording a generated connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding

system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data VBV has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data VBV has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second predetermined section of the second MPEG picture data, and second address information that shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the recording step comprises:

a detecting step of detecting the first VBV buffer occupation value relevant information corresponding to an specified connection position in the first MPEG picture data based on the first address information, and detecting the second VBV buffer occupation value relevant information corresponding to an end position of a connection section based on the second address information, with the specified connection position specified as a boundary of the first predetermined section in at least the first MPEG picture data, wherein the connection section is a

section from the specified connection position in the second MPEG picture data as a starting position to a boundary of the second predetermined section located a predetermined time after the specified connection position in the second MPEG picture data as the end position; and

a re-encoding step of re-encoding the connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the connection section, according to the MPEG encoding system, thereby to obtain the connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the information value relating to the VBV buffer occupation value obtained based on the detected second VBV buffer occupation value relevant information,

thereby recording the connection section re-encoded data onto a recording medium.

31. (Original) The MPEG picture data recording method according to claim 30, wherein the recording step records a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

32. (Original) An MPEG picture data recording method comprising a recording step of recording a generated third connection section re-encoded data that has been encoded according to an

MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

the first MPEG picture data VBV has first VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each first predetermined section of the first MPEG picture data, and first address information that shows a position of the first VBV buffer occupation value relevant information in the first MPEG picture data,

the second MPEG picture data VBV has second VBV buffer occupation value relevant information that shows an information value relating to a VBV buffer occupation value at an MPEG encoding starting point in time or an end point in time of a last picture in each second predetermined section of the second MPEG picture data, and second address information that shows a position of the second VBV buffer occupation value relevant information in the second MPEG picture data, and

the recording step comprises:

a detecting step of detecting the first VBV buffer occupation value relevant information corresponding to a starting position of a first connection section based on the first address information, and detecting the second VBV buffer occupation value relevant information corresponding to an end position of a second connection section based on the second address

information, wherein the first connection section is a section from a boundary of the first predetermined section located a first predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position, and the second connection section is a section from the specified connection position in the second MPEG picture data to a boundary of the second predetermined section located a second predetermined time after the specified connection position in the second MPEG picture data as an end position; and

a re-encoding step of re-encoding a third connection section decoded picture data according to the MPEG encoding system thereby to obtain a third connection section re-encoded data, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value obtained based on the detected first VBV buffer occupation value relevant information and ends with the information value relating to the VBV buffer occupation value obtained based on the detected second VBV buffer occupation value relevant information, wherein the third connection section is a section obtained by combining the first connection section and the second connection section together, and the third connection section decoded picture data consists of a first connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the first connection section, and a second connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the second connection section,

thereby recording the third connection section re-encoded data onto a recording medium.

33. (Original) The MPEG picture data recording method according to claim 32, wherein the recording step records a connection section MPEG multiplexed data that includes the third connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

34. (Original) An MPEG picture data recording method comprising a recording step of recording a generated third connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, wherein

a first connection section is a section from a boundary of the first predetermined section located a first predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position; a second connection section is a section from the specified connection position in the second MPEG picture data to a boundary of the second predetermined section located a second predetermined time after the specified connection position in the second MPEG picture data as an end position; and a third connection section is a section obtained by connecting the first connection section and the second connection section,

the recording step re-encodes a third connection section decoded picture data according to the MPEG encoding system thereby to obtain a third connection section re-encoded data and record the third connection section re-encoded data onto a recording medium, wherein the third connection section decoded picture data consists of a first connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the first connection section, and a second connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the second connection section, and

the re-encoding is executed while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value at the time of encoding the first MPEG picture data at a position corresponding to the specified connection position and ends with the information value relating to the VBV buffer occupation value at the time of encoding the second MPEG picture data at a position corresponding to the end position of the connection section.

35. (Original) An MPEG picture data reproducing apparatus for reproducing MPEG picture data as a picture data encoded according to the MPEG encoding system, the MPEG picture data reproducing apparatus comprising:

connectively reproducing means for obtaining a connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG

picture data of a first MPEG picture data and a second MPEG picture data by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, and then connectively reproducing the first MPEG picture data and the second MPEG picture data, wherein

the connection section re-encoded data is re-encoded data generated by re-encoding the connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the connection section, according to the MPEG encoding system, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value at the time of encoding the first MPEG picture data at a position corresponding to a starting position of the connection section and ends with the information value relating to the VBV buffer occupation value at the time of encoding the second MPEG picture data at a position corresponding to the specified connection position in the second MPEG picture data, wherein the connection section is a section from a position located a predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position, and

the connectively reproducing means reproduces the first MPEG picture data to the starting position of the connection section, and then reproduces the connection section re-encoded data from the starting position of the connection section to the end position thereof, and

then reproduces the second MPEG picture data from the specified connection position in the second MPEG picture.

36. (Original) The MPEG picture data reproducing apparatus according to claim 35, wherein

the first MPEG picture data is picture data obtained from a first MPEG multiplexed data that includes the first MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system,

the second MPEG picture data is picture data obtained from a second MPEG multiplexed data that includes the second MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system, and the connection section re-encoded data is picture data obtained from a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

37. (Original) An MPEG picture data reproducing apparatus for reproducing MPEG picture data as a picture data encoded according to the MPEG encoding system, the MPEG picture data reproducing apparatus comprising:

connectively reproducing means for obtaining a connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data by connecting the first

MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, and then connectively reproducing the first MPEG picture data and the second MPEG picture data, wherein

the connection section re-encoded data is re-encoded data generated by re-encoding the connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the connection section, according to the MPEG encoding system, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value at the time of encoding the first MPEG picture data at a position corresponding to the specified connection position in the first MPEG picture data and ends with the information value relating to the VBV buffer occupation value at the time of encoding the second MPEG picture data at a position corresponding to an end position of the connection section, wherein the connection section is a section from the specified connection position in the second MPEG picture data as a starting position to a position located a predetermined time after the specified connection position in the second MPEG picture data as the end position, and

the connectively reproducing means reproduces the first MPEG picture data to the specified connection position in the first MPEG picture, and then reproduces the connection section re-encoded data from the starting position of the connection section to the ending position thereof, and then reproduces the second MPEG picture data from the end position of the connection section.

38. (Currently Amended) The MPEG picture data reproducing apparatus according to claim [[36]] 37, wherein

the first MPEG picture data is picture data obtained from a first MPEG multiplexed data that includes the first MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system,

the second MPEG picture data is picture data obtained from a second MPEG multiplexed data that includes the second MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system, and the connection section re-encoded data is picture data obtained from a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

39. (Original) An MPEG picture data reproducing apparatus for reproducing MPEG picture data as a picture data encoded according to the MPEG encoding system, the MPEG picture data reproducing apparatus comprising:

connectively reproducing means for obtaining a third connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data by connecting

the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, and then connectively reproducing the first MPEG picture data and the second MPEG picture data, wherein

the connection section re-encoded data is re-encoded data generated by re-encoding, according to the MPEG encoding system, the third connection section decoded picture data consisting of a first connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the first connection section, and a second connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the second connection section, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value at the time of encoding the first MPEG picture data at a position corresponding to a starting position of the first connection section and ends with the information value relating to the VBV buffer occupation value at the time of encoding the second MPEG picture data at a position corresponding to an end position of the second connection position, wherein

the first connection section is a section from a position located a first predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position, the second connection section is a section from the specified connection position in the second MPEG picture data as a starting position to a position located a second predetermined time after the specified connection position in the second MPEG picture data as the end position, and the third

connection section is a section obtained by combining the first connection section and the second connection section together, and

the connectively reproducing means reproduces the first MPEG picture data to the starting position of the first connection section, and then reproduces the third connection section re-encoded data from the starting position of the third connection section to the end position thereof, and then reproduces the second MPEG picture data from the end position of the second connection section.

40. (Original) The MPEG picture data reproducing apparatus according to claim 39, wherein

the first MPEG picture data is picture data obtained from a first MPEG multiplexed data that includes the first MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system,

the second MPEG picture data is picture data obtained from a second MPEG multiplexed data that includes the second MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system, and

the third connection section re-encoded data is picture data obtained from a connection section MPEG multiplexed data that includes the third connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

41. (Original) An MPEG picture data reproducing method comprising a connectively reproducing step of obtaining a connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, and then connectively reproducing the first MPEG picture data and the second MPEG picture data, wherein

the connection section re-encoded data is re-encoded data generated by re-encoding the connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the connection section, according to the MPEG encoding system, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value at the time of encoding the first MPEG picture data at a position corresponding to a starting position of the connection section and ends with the information value relating to the VBV buffer occupation value at the time of encoding the second MPEG picture data at a position corresponding to the specified connection position in the second MPEG picture data, wherein the connection section is a section from a position located a predetermined time before the specified connection position in the first MPEG

picture data as the starting position to the specified connection position in the first MPEG picture data as an end position, and

the connectively reproducing step reproduces the first MPEG picture data to the starting position of the connection section, and then reproduces the connection section re-encoded data from the starting position of the connection section to the end position thereof, and then reproduces the second MPEG picture data from the specified connection position in the second MPEG picture.

42. (Original) The MPEG picture data reproducing method according to claim 41, wherein

the first MPEG picture data is picture data obtained from a first MPEG multiplexed data that includes the first MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system,

the second MPEG picture data is picture data obtained from a second MPEG multiplexed data that includes the second MPEG picture data as an element encoded a data and that has been generated by being packet-multiplexed according to the MPEG encoding system, and

the connection section re-encoded data is picture data obtained from a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

43. (Original) An MPEG picture data reproducing method comprising a connectively reproducing step of obtaining a connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, and then connectively reproducing the first MPEG picture data and the second MPEG picture data, wherein

the connection section re-encoded data is re-encoded data generated by re-encoding the connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the connection section, according to the MPEG encoding system, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value at the time of encoding the first MPEG picture data at a position corresponding to the specified connection position in the first MPEG picture data and ends with the information value relating to the VBV buffer occupation value at the time of encoding the second MPEG picture data at a position corresponding to an end position of the connection section, wherein the connection section is a section from the specified connection position in the second MPEG picture data as a starting position to a position located a predetermined time after the specified connection position in the second MPEG picture data as the end position, and

the connectively reproducing step reproduces the first MPEG picture data to the specified connection position in the first MPEG picture, and then reproduces the connection section re-encoded data from the starting position of the connection section to the ending position thereof, and then reproduces the second MPEG picture data from the end position of the connection section.

44. (Original) The MPEG picture data reproducing method according to claim 43, wherein

the first MPEG picture data is picture data obtained from a first MPEG multiplexed data that includes the first MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system,

the second MPEG picture data is picture data obtained from a second MPEG multiplexed data that includes the second MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system, and

the connection section re-encoded data is picture data obtained from a connection section MPEG multiplexed data that includes the connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.

45. (Original) An MPEG picture data reproducing method comprising a connectively reproducing step of obtaining a third connection section re-encoded data that has been encoded according to an MPEG encoding system as a data for reproducing two MPEG picture data of a

first MPEG picture data and a second MPEG picture data as a picture data encoded according to the MPEG encoding system by connecting the first MPEG picture data to the second MPEG picture data at specified connection positions specified in the respective MPEG picture data, and then connectively reproducing the first MPEG picture data and the second MPEG picture data, wherein

the connection section re-encoded data is re-encoded data generated by re-encoding, according to the MPEG encoding system, the third connection section decoded picture data consisting of a first connection section decoded picture data as a picture data obtained by decoding the first MPEG picture data in the first connection section, and a second connection section decoded picture data as a picture data obtained by decoding the second MPEG picture data in the second connection section, by executing the re-encoding while controlling the amount of code such that a transition of the information value relating to the VBV buffer occupation value at the time of the re-encoding starts from the information value relating to the VBV buffer occupation value at the time of encoding the first MPEG picture data at a position corresponding to a starting position of the first connection section and ends with the information value relating to the VBV buffer occupation value at the time of encoding the second MPEG picture data at a position corresponding to an end position of the second connection position, wherein

the first connection section is a section from a position located a first predetermined time before the specified connection position in the first MPEG picture data as the starting position to the specified connection position in the first MPEG picture data as an end position, the second connection section is a section from the specified connection position in the second MPEG

picture data as a starting position to a position located a second predetermined time after the specified connection position in the second MPEG picture data as the end position, and the third connection section is a section obtained by combining the first connection section and the second connection section together, and

the connectively reproducing step reproduces the first MPEG picture data to the starting position of the first connection section, and then reproduces the third connection section re-encoded data from the starting position of the third connection section to the end position thereof, and then reproduces the second MPEG picture data from the end position of the second connection section.

46. (Original) The MPEG picture data reproducing method according to claim 45, wherein

the first MPEG picture data is picture data obtained from a first MPEG multiplexed data that includes the first MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system,

the second MPEG picture data is picture data obtained from a second MPEG multiplexed data that includes the second MPEG picture data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system, and

the third connection section re-encoded data is picture data obtained from a connection section MPEG multiplexed data that includes the third connection section re-encoded data as an element encoded data and that has been generated by being packet-multiplexed according to the MPEG encoding system.